ENVIRONMENTAL INDICATOR FORM

CA 750 MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL

JOHN F. QUEENY PLANT ST. LOUIS, MISSOURI

Prepared for
Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

SOLUTIA

September 2002

URS

URS Corporation
2318 Millpark Drive
Maryland Heights, MO 63043
(314) 429-0100
23-20000058.00

Environmental Indicator Forms

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Stephen Doolen

STATE OF MISSOURI Bob Holden, Governor • Stephen M. Mahfood, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.state.mo.us

September 30, 2002

Mr. Michael L. House
Manager, Remedial Projects
Remediation Management Group
Solutia Inc.
J.F. Queeny Plant
P. O. Box 66760
St. Louis, MO 63166-6760

RE: Corrective Action Environmental Indicator Evaluations, Solutia Inc. J.F. Queeny Plant, 201 Russell Blvd., St. Louis, MO 63104, EPA ID #: MOD004954111

Dear Mr. House:

The Missouri Department of Natural Resources' (department) Hazardous Waste Program, in consultation with the U.S. Environmental Protection Agency (EPA) Region VII, has completed two corrective action Environmental Indicator (EI) evaluations for the Solutia Inc. J.F. Queeny, St. Louis, Missouri, facility. As you are aware, the EPA and Congress have recently been interested in developing the means to gauge the progress, on a national level, of human health and environmental protection at corrective action facilities. The enclosed EI evaluations are an outgrowth of that interest. These evaluations represent a "snapshot" of current facility conditions in terms of human exposures to contamination (CA725) and migration of contaminated groundwater (CA750).

The EI evaluation format was developed jointly by an EPA-State work group to address specific corrective action goals established pursuant to the federal Government Performance Results Act (GPRA) of 1993. These corrective action goals are to control human exposures to contamination at 95%, and migration of contaminated groundwater at 70%, of high priority GPRA "baseline" facilities by the end of federal fiscal year 2005. As you may be aware, the J.F. Queeny St. Louis facility is on the GPRA "baseline" list of facilities.

Enclosed are copies of the EI evaluations for the J.F. Queeny facility. The department is pleased to advise you that it has been determined that the human exposures are currently considered under control within the context of the EI evaluations and, for groundwater migration, more information is needed to make a determination. In the future, the department and EPA will

periodically be re-evaluating the status of both EIs and would like to encourage Solutia to continue its efforts to ensure that any future evaluations yield similar, positive results for human health and that appropriate information is collected to ensure that groundwater migration can be demonstrated to be under control.

We appreciate Solutia's thorough and prompt response in providing input for preparation of the department's EI's. Thank you for your continued commitment to environmental protection. If you have any questions about the enclosed EI evaluations, please feel free to contact me at the Department of Natural Resources, Hazardous Waste Program, P.O. Box 176, Jefferson City, MO 65102 or (573) 751-3553 or Ms. Stephanie Doolan of the EPA at (913) 551-7719.

Sincerely,

HAZARDOUS WASTE PROGRAM

Vin Journey, R.G.
Environmental Engineer
Permits Section

VJ:sw

Enclosures

c: Ms. Stephanie Doolan, U.S. EPA Region VII
Ms. Demetra Salisbury, U.S. EPA Region VII

Documentation of Environmental Indicator Determination
in accordance with EPA Interim Final Guidance 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRA Info Code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: **Solutia Inc. J.F. Queeny Plant**
Facility Address: **201 Russell Blvd., St. Louis, MO 63104**
Facility EPA ID #: **MOD004954111**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   ✓ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

   The following SWMUs and AOCs were considered in completing this EI.

SWMUs	AOCs
WW Building Area	KK Building Area
Former Boiler Slag Accumulation Area	Former Lab Waste Filtration Unit
Former FF Building Area	
VV Building Area	
Former Acetanilides Production Area	
Former Quarry Area	
Former Coal Storage Yard	
Former Bulk Chemical Storage Area	

These areas are identified in the attached **Figure A-1 (Appendix A)**. The SWMUs/AOCs are also further described in **Appendix A**. Groundwater is being addressed on a sitewide basis. The primary source of information concerning these SWMUs/AOCs and groundwater can be found in the report, "RFI Data Gap Investigation Report", Solutia Inc., dated July 2002. **Appendix B** includes a list of other relevant site investigation reports. **Figure A-2** shows the location of monitoring wells and piezometers currently at the facility.

BACKGROUND

Definition of Environmental Indicators (for RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., sitewide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determination status codes should remain in RCRA Info national database ONLY as long as they remain true (i.e., RCRA Info status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria [e.g., Maximum Contaminant Levels (MCLs), the

maximum permissible level of a contaminant in water delivered to any user of a public water system under the Safe Drinking Water Act]) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

__✓__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

_____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Table C-1 in **Appendix C** (revised from Table 4-4 of the RFI Data Gap Investigation Report, July 2002) identifies analytes in groundwater samples that exceed screening criteria (e.g., MCLs). The tables are organized by hydrostratigraphic zone. **Figure A-2** identifies the wells by zone. MCLs are applicable standards for public water supplies. However, groundwater at the facility, and within the entire City of St. Louis, is not used as such. Solutia therefore does not believe that MCLs are relevant "levels" in the context of this EI. Solutia believes that the primary issue with respect to groundwater is via migration to surface water (Mississippi River) and potential effects there. This has been a fundamental premise of RFI activities (e.g., Data Gap Work Plan) over the past several years. As such, the applicable "levels" should be protective of aquatic receptors, as well as other designated uses for the river. An iterative ecological screening process was conducted in the Data Gap investigation, which included comparing site data to relevant surface water screening criteria and taking into account such factors as frequency of detection, mobility and toxicity. The results of this assessment indicated that four constituents posed a potential concern: benzene, chlorobenzene, 1,4-dichlorobenzene and xylenes.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

_____ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

✓ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The migration of contaminated groundwater at the facility is believed to have stabilized for the following reasons.

- The extent of impact has been characterized via groundwater monitoring and investigations conducted over the past approximately 20 years. The "existing area of contaminated groundwater" has been characterized for risk evaluation and risk management purposes. There are a few areas where Solutia believes additional data are needed in this regard, and work is in progress to obtain the additional information.
- The primary migration of groundwater from the site is toward the Mississippi River (located approximately 300 feet to 1100 feet from the facility) (**Figure 1**). The river provides a hydraulic barrier to further migration downgradient of the facility.
- Over the past approximately 20 years, the majority of manufacturing activities has ceased, processes have been dismantled, and areas have been covered to minimize surface water infiltration.
- The results of groundwater modeling and preliminary results of natural attenuation monitoring confirm that natural processes are actively reducing constituent concentrations.
- The plant has a groundwater protection plan, which includes regular video inspection of sewers, voluntary groundwater monitoring, dismantling of idled facilities, removal of the majority of USTs, etc., in order to minimize the potential for ongoing releases to groundwater.

Modeling conducted as part of the Data Gap investigation predicted groundwater concentrations of benzene, chlorobenzene, 1,4-dichlorobenzene and xylenes potentially discharging to the Mississippi River northeast and southeast of the site (RFI Data Gap Investigation Report, July, 2002). This information is summarized in the table on the following page (modified from the Data Gap Investigation Report, July 2002).

Parameter	Units	Southern Section	Northern Section	Ecological Screening Value (mg/L)
Benzene	mg/L	0.013	0.0001	0.053[2]
Chlorobenzene	mg/L	0.526	0.268	0.195[2]
1,4-Dichlorobenzene	mg/L	---	0.0001	0.0112[2]
Xylene	mg/L	0.001	0.004	0.0018[3]
Groundwater Flow	cfs[1]	0.9	0.8	---

[1]Denotes cubic feet per second
[2]Freshwater surface water screening values, USEPA Region 4 (2001)
[3]Ambient Water Quality Criteria and Final Chronic Values from Ecotox Threshold EcoUpdate, USEPA 1996

Modeled concentrations of benzene and 1,4-dichlorobenzene potentially discharging to the river are below the conservative, ecological-based screening criteria and would not pose a significant concern. The modeled concentrations of chlorobenzene and xylenes potentially discharging to the river slightly exceed these screening criteria (by approximately two times); however, this would be considered "insignificant" as defined in this EI as the predicted concentrations are within ten times the screening criteria. Further, potential receptor populations are limited by the continual fluctuations in the river that prohibit significant habitat development. Lastly, groundwater flow containing chlorobenzene and xylenes is cumulatively predicted to be less than two cubic feet per second (cfs), whereas flow in the Mississippi is hundreds to thousands of cfs, even in a narrow area along the shoreline.

The results of post-Data Gap groundwater monitoring data in the former Bulk Chemical Storage Area (southeastern portion of site) indicated a variability in groundwater conditions that is not yet fully understood. Solutia is currently developing a work plan to better understand the groundwater dynamics in this area and potential implications with respect to ecological concerns.

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times the appropriate groundwater "level," and there are no other conditions (e.g., the nature or number of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration [3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times the appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialist(s), including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater cannot be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring**/measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

_____

_____

8. Check the appropriate RCRA Info status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

_____ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Solutia J.F. Queeny facility, EPA ID # MOD004954111, located at 201 Russell Blvd., St. Louis, MO 63104. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater." This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

✓ IN - More information is needed to make a determination.

Completed by: (Signature) _____ Date 9/30/02
(Print) Vin Journey, R.G.
(Title) Environmental Engineer II

Supervisor: (Signature) _____ Date 9/30/02
(Print) Rich Nussbaum, P.E., R.G.
(Title) Corrective Action Unit Chief
(EPA Region or State) State of Missouri

Locations where References may be found:
Hazardous Waste Program: Soluita, Inc. (Queeny) TSD Files located at 1738 E. Elm Street, Jefferson City, MO 65101.

Contact telephone and e-mail numbers

(Name) Vin Journey
(Phone #) (573) 751-3553
(E-mail) nrjourv@mail.dnr.state.mo.us

APPENDIXA

APPENDIX A — SWMU and AOC Descriptions

DESCRIPTION AND STATUS OF SWMUs AND AOCs

The Queeny plant contains eight SWMUs and two AOCs that are currently included in the corrective action program. These areas are:

SWMUs	AOCs
WW Building Area	KK Building Area
Former Boiler Slag Accumulation Area	Former Lab Waste Filtration Unit
Former FF Building Area	
VV Building Area	
Former Acetanilides Production Area	
Former Quarry Area	
Former Coal Storage Yard	
Former Bulk Chemical Storage Area	

These areas have been under investigation since 1983 by either internal investigations performed by Monsanto (Solutia) or investigations performed under RCRA Corrective Action. Solutia has performed several site-wide and SWMU investigations (e.g. hydrogeologic investigations) starting in 1983 and continuing into the late 1980's. During the late 1980's RCRA Corrective Action activities began at the facility with the RFA. The various investigations are discussed below. The following descriptive information on the SWMUs and AOCs was obtained from a combination of two documents:

- RFI Data Gap Work Plan (O'Brien & Gere, 1999)
- RCRA Part B Corrective Action Only Permit Application (Solutia, 1998).

The general locations of the SWMUs and AOCs are illustrated on **Figure A-1**.

KK BUILDING AREA

The KK Building Area is an area approximately 200 feet (ft) by 300 ft, west of the northwest corner of the KK Building. The KK Building is a warehouse that was used for the storage of dry materials. The area is now leased to others. The AOC is an area that was used for the unloading and bulk storage of various raw materials. The unloading and bulk storage area was constructed in the early to mid-1950s and dismantled in the early to mid-1980s. The ground covering in this area is asphalt, concrete, and crushed and compacted stone. The property has been used in the past for pilot production activities and was the location of storage buildings.

APPENDIX A — SWMU and AOC Descriptions

During all AOC investigations to date, a total of 8 soil borings (two borings were used during aquifer testing) were advanced yielding 10 soil samples for analysis VOCs, semivolatile organic compounds (SVOCs), and metals). VOCs are the primary focus based on the results of previous investigations.

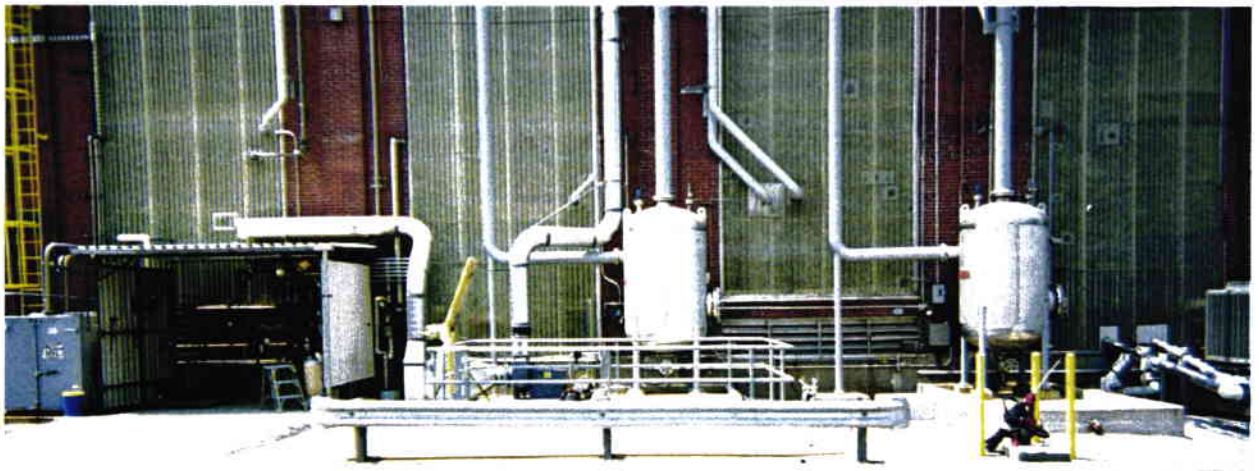
The photograph below depicts the KK Building Area, looking southeast.

APPENDIX A — SWMU and AOC Descriptions

WW BUILDING AREA

The WW Building is an existing research and development pilot plant (leased to Monsanto [now a subsidiary of Pharmacia]) that was originally built in approximately 1945-1946. It occupies an area of approximately 75 ft by 105 ft. The SWMU associated with WW Building is the area near the northeast corner of the building where an electrical transformer was located. This transformer, which had Aroclor fluid as a heat transfer medium, was removed from service in the late 1970s. PCBs were reportedly detected in the area during the excavation to construct a concrete pit in the location of the former electrical transformer. Prior to the Data Gap activities, RFI investigations had not been conducted at this SWMU. The ground covering in this area is asphalt and concrete.

The photograph below, looking west, shows a concrete pit where the former transformer was located on the east side of WW Building (behind guard rail).



APPENDIX A — SWMU and AOC Descriptions

FORMER BOILER SLAG ACCUMULATION AREA

The former Boiler Slag Accumulation Area was a small area, approximately 25 ft by 25 ft, located on the northwest corner of the former JJJ boiler house. This coal fired boiler facility was built in the early 1900s and was dismantled in 1992. The Boiler Slag Accumulation Area was used as a cooling spot for the clinkers that came from the bottom of the boiler. The clinkers were placed on this paved spot on the ground by a front-end loader, and when they had sufficiently cooled, were picked up and deposited into a dumpster. The contents were periodically removed for off-site disposal. The ground covering in this area is asphalt, concrete, and gravel.

During all SWMU investigations to date, a total of 14 soil borings were advanced yielding 20 soil samples for analysis (VOCs, SVOCs, pesticides, herbicides, PCBs, dioxins and metals). Key analytes identified through previous investigations include PCBs. According to Solutia, the source of the PCBs was a former transformer substation located nearby.

The photograph below depicts the former Boiler Slag Accumulation Area, looking west.

APPENDIX A — SWMU and AOC Descriptions

FORMER LAB WASTE FILTRATION UNIT AREA

The former Lab Waste Filtration Unit area was the location of an organic/water separator tank (lab waste filtration unit) that was located underground in a concrete vault between Buildings AAA and BM. This organic-water separator was installed when the laboratory was built in the mid-1980s. The lab waste filtration unit collected wastewater from the laboratory facility prior to the wastewater being discharged into the MSD sewer system. On a routine basis, this separator was taken out of service and the organic materials removed for off-site treatment and disposal. The filtration unit was used until a change in MSD standards prompted its removal on August 17, 1990. During the removal, the tank and vault were both observed to be in good condition and undamaged. The tank was removed and the concrete vault was backfilled with clean soil and paved over. VOCs were reportedly detected in the area during the Building AAA and BM Investigation (Monsanto, 1995). Prior to the Data Gap activities, no RFI investigations had been conducted at this AOC.

The photograph below depicts the former location of the Lab Waste Filtration Unit, looking east.

APPENDIX A — SWMU and AOC Descriptions

FORMER FF BUILDING AREA

The FF Building was a production unit used for the manufacture of TCC, a bacteriostat used in body soap. Production of TCC began at the Queeny Plant in 1951, and in early 1991 operations ceased and the facility was dismantled. The FF Building occupied an area of approximately 150 ft by 75 ft. One of the raw materials used in the production of TCC was perchloroethylene or tetrachloroethylene (PCE), which was stored in a UST. The area associated with the FF Building that constitutes the SWMU involves the area around this former leaking UST. The ground covering in this area is asphalt, and crushed and compacted stone. This area is currently not used and no buildings are located in the area.

During all SWMU investigations, a total of 52 soil borings (geological and environmental) were advanced yielding 30 soil samples for analysis (VOCs). The scope of some of the previous investigations focused on geologic characterization, e.g., depth to bedrock. As such, analytical samples were not collected from each boring. VOCs are the primary focus at this SWMU based on the results of previous investigations.

The photograph below depicts the former FF Building Area, looking northeast.

APPENDIX A — SWMU and AOC Descriptions

V V BUILDING AREA

V V Building is an existing structure that is currently serving as the production area known as "Central Drumming." Central Drumming is an area that occupies approximately 150 ft by 225 ft. Activities at this location involve the unloading and bulk storage of a wide variety of liquid materials and the repackaging of these materials or a blend of these materials into smaller quantities (i.e., quarts, gallons, 5-gallon and 55-gallon containers). The identified SWMU area associated with VV Building involves a railcar unloading area where Aroclors were unloaded and pumped into storage prior to repackaging for shipment. This area is a paved alley located between two production areas.

During all SWMU investigations, a total of 33 soil borings were advanced yielding 37 soil samples for analysis (PCBs and pesticides). PCBs are the primary focus based on the results of previous investigations.

The photograph below depicts the V V Building Area, looking south.

APPENDIX A — SWMU and AOC Descriptions

FORMER ACETANILIDES PRODUCTION AREA

The former Acetanilides (or alachlor, also referred to as Lasso™) Production Area is located in the south-central portion of the Queeny Plant. The estimated size of this manufacturing block is 300 ft by 450 ft. This production area began operations in 1966, as a multi-product facility. The Lasso™ operations ceased in 1991. The production facility is still in existence and continues to be used as a multi-product facility. The ground covering in this area consists of buildings, asphalt, concrete foundations of former aboveground storage tanks, and railroad ballast near the railroad tracks.

During all SWMU investigations, a total of 38 soil borings were advanced yielding 48 soil samples for analysis (combinations of VOCs, SVOCs, pesticides, PCBs and metals). Key analytes identified through these investigations include alachlor, chlorobenzene, PCE and other VOCs.

The photograph below depicts a portion of the former Acetanilides Production Area, looking west.

APPENDIX A — SWMU and AOC Descriptions

FORMER QUARRY AREA

The former Quarry Area is located on land which was purchased from American Car and Foundry in 1953. Limestone was quarried via surface mining techniques beginning prior to 1875 (Dry, 1979). It was backfilled with soil, concrete foundations and other miscellaneous rubble. The quarry was completely filled by 1971. The size of the Quarry Area is estimated to be approximately 450 ft by 450 ft with estimated depths in excess of 100 ft. The ground covering in this area is crushed and compacted stone and vegetation. The area is enclosed by a locked security fence. Sources of subsurface impact in this area may be from debris in the fill and the coal deposited here to fill in the quarry.

During all SWMU investigations, a total of 12 soil borings were advanced yielding 22 soil samples for analysis (VOCs, SVOCs, pesticides, herbicides, metals and dioxins). Key analyte groups identified through these investigations include metals, VOCs, and SVOCs.

The photograph below depicts a portion of the former Quarry Area, looking southeast.

APPENDIX A — SWMU and AOC Descriptions

FORMER COAL STORAGE YARD

The former Coal Storage Yard is approximately 2.68 acres of unimproved property purchased in 1982 from Hagar Hinge. The property was used solely for the temporary storage of coal, in anticipation of a coal miners strike. The coal was used for boiler fuel at the Queeny Plant. The use of this area was a "one time" occurrence and the property was later sold to Schaeffer Manufacturing in 1994.

The ground covering in this area is crushed and compacted stone and coal fines. This property is currently used to temporarily store tractor-trailer parts; no buildings are located on the SWMU. The SWMU is located outside of the Queeny Plant main property and site security fence, but it is fenced along the eastern boundary and is partially fenced to the north, south, and west.

During all SWMU investigations, a total of 10 soil borings (4 borings were analyzed as a composite sample in 1988, results are not provided) were advanced yielding 6 soil samples for analysis (VOCs). VOCs are the primary focus based on the results of previous investigations.

The photograph below depicts the former Coal Storage Yard, looking north.

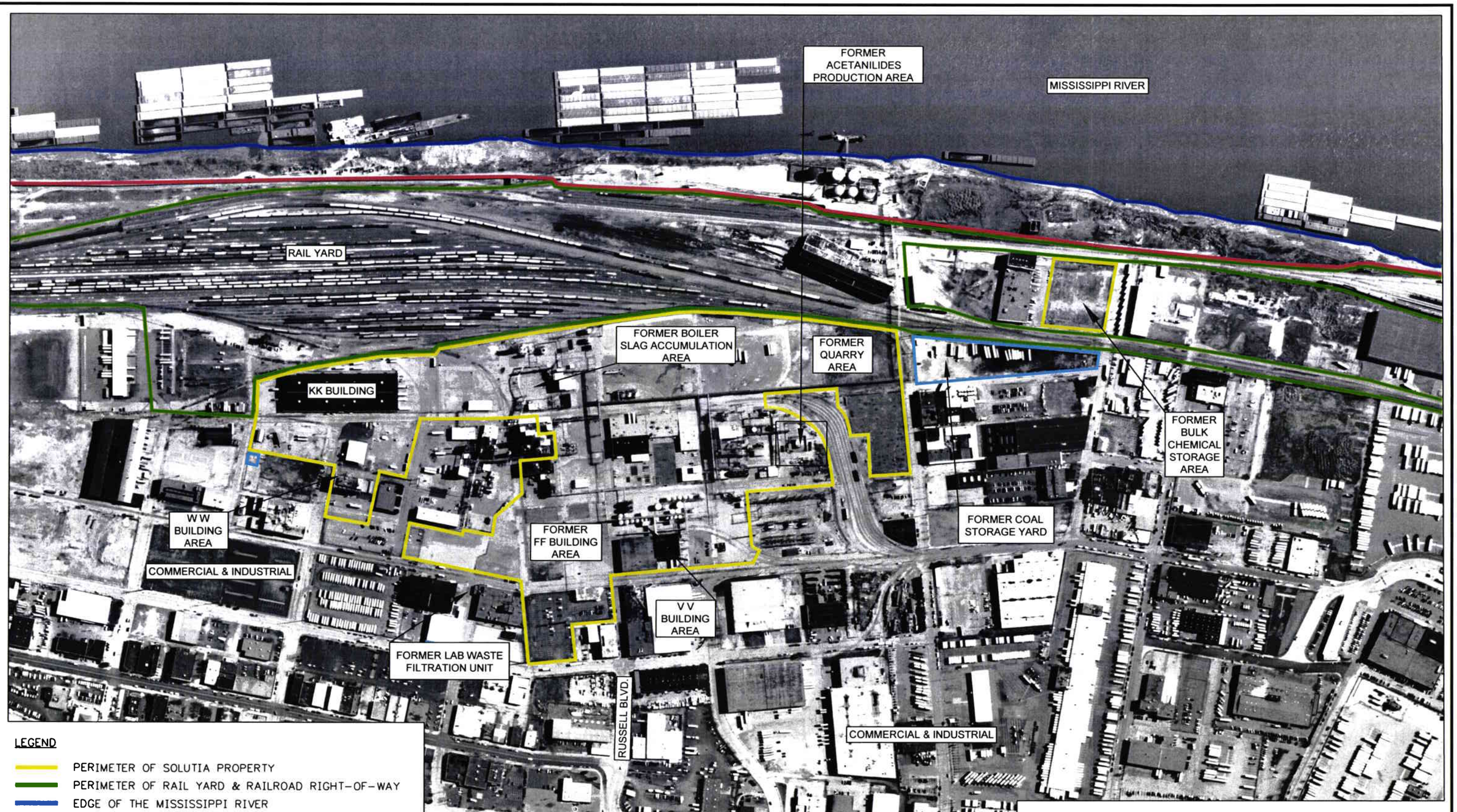
APPENDIX A — SWMU and AOC Descriptions

FORMER BULK CHEMICAL STORAGE AREA

The former Bulk Chemical Storage Area is a rectangular shaped parcel of land approximately 285 ft by 300 ft, or approximately 1.94 acres. It was purchased in 1968 from Clark Oil Company and included two (2) 500,000 gallon aboveground storage tanks and two (2) 300,000 gallon aboveground storage tanks that were used by Clark for fuel storage. After the 1968 purchase, raw materials used at the Queeny Plant were unloaded from a barge terminal, located on the west bank of the Mississippi River, and pumped into these tanks for storage. Materials stored at the terminal by Monsanto and others included: petroleum products, alkyl benzenes, blends of alkyl benzenes (Purex A-220 and Canadian A-221), Santicizer 154 plasticizer (p-t-butylphenyl diphenyl phospate), monochlorobenzene, ortho-nitrochlorobenzene, sodium hydroxide, and potassium hydroxide. The use of this area was discontinued in 1987 and the tanks were removed. This area has at times been leased to other companies. No one is leasing this property at this time and the property is under full Solutia control. The ground covering in this area is asphalt, crushed and compacted stone, and sparse volunteer vegetation. The SWMU is located outside of the Queeny Plant main property and site security fence, but is enclosed by a locked security fence.

During all SWMU investigations, a total of 23 soil borings (nine borings were analyzed as a composite sample in 1988, results are not provided) were advanced yielding 26 soil samples for analysis (VOCs, SVOCs, pesticides, herbicides, metals, dioxins). Key parameter groups identified during previous investigations include VOCs and SVOCs.

The photograph below depicts the former Bulk Chemical Storage Area, looking east. Note the Corps of Engineers flood wall in the background.



LEGEND

- PERIMETER OF SOLUTIA PROPERTY
- PERIMETER OF RAIL YARD & RAILROAD RIGHT-OF-WAY
- EDGE OF THE MISSISSIPPI RIVER
- U.S. ARMY CORPS OF ENGINEERS FLOODWALL
- RFI DATA GAP ACTIVITIES ON NON-SOLUTIA PROPERTY

APPROXIMATE SCALE: 1IN. = 400FT

SOURCE: SURDEX AERIAL PHOTO, FLOWN APRIL 6, 2002

SOLUTIA INC. MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750) J. F. QUEENY PLANT ST. LOUIS MISSOURI		PROJECT NO. 21560870.00013
URS		
DRN. BY: djd 9/2/02 DSGN. BY: tjo CHKD. BY:	Site Aerial Photograph with SWMUs and AOCs	FIG. NO. A-1

File: E:\23-20000058.00\EIS\AERIAL A-1.DWG Last edited: SEP. 04, 02 @ 1:29 p.m. by: DJDECUIO

300 0 300 600

1 IN. = 300 FT.

LEGEND (GROUNDWATER MONITORING WELLS AND PIEZOMETERS)

- LPZ-5 WELLS SCREENED IN THE FILL & SILTY CLAY
- MW-7A WELLS SCREENED IN THE SAND
- MW-2R WELLS SCREENED IN THE BEDROCK

NOTES:
1. LOCATION OF MISSISSIPPI RIVER IS APPROXIMATE.
2. THIS FIGURE DEPICTS THE PRIMARY SCREENED INTERVAL FOR WELLS; IN SOME CASES, WELL SCREENS MAY EXTEND ACROSS STRATIGRAPHIC UNITS.

REFERENCE:
RCRA FACILITY INVESTIGATION DATA GAP WORK PLAN JOHN F. QUEENY PLANT BY O'BRIEN & GERE ENGINEERS, INC., SEPTEMBER 1999

SOLUTIA INC. MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750) J. F. QUEENY PLANT ST. LOUIS MISSOURI	PROJECT NO. 21560870.00013
URS	
DRN. BY:djd 9/2/02 DSGN. BY:tja CHKD. BY:	Monitoring Well and Piezometer Location Map — FIG. NO. A-2

File: E:\23-26000058.00\ESVFIG_A-2.DWG Last edited: SEP. 04, 02 @ 1:18 p.m. by DJDCOLE

APPENDIX B

APPENDIX B — Previous Site Investigations

SUMMARY OF PREVIOUS SITE INVESTIGATIONS

This section presents a brief summary of pertinent environmental studies and investigations that have taken place at the Queeny Plant. Investigations that have taken place at the facility fall into two categories; internal investigations performed by Monsanto or Solutia, and investigations required under RCRA Corrective Action. Solutia has performed several site-wide and SWMU specific investigations (e.g., hydrogeologic investigations) starting in 1983 and continuing into the late 1980's. During the late 1980's RCRA Corrective Action activities began at the facility with the RCRA Facility Assessment (RFA). The following is an overview of facility-driven and RCRA regulatory compliance investigations for the Queeny Plant.

Preliminary Hydrogeologic Study (Environmental Science & Engineering, Inc. – April 1984)

This study, conducted in 1983, was the first hydrogeological investigation completed at the facility. During the investigation 16 groundwater monitoring wells (MW-1A, MW-1B, MW-2A, MW-2B, MW-3, MW-4, MW-5, MW-6*A*, MW-7A, MW-7B, MW-8A, MW-8B, MW-9, MW-10, MW-11A, MW-11B) were installed and sampled across the facility. Monitoring wells MW-1A, MW-1B and MW-6*A* have since been removed. Groundwater samples were analyzed for total organic carbon (TOC) and total organic halides (TOX). The site geology was logged from the deeper boring from each well cluster by split-spoon sampling. Slug tests were conducted to determine the hydraulic conductivity of the soil formation surrounding the screened section of the well.

Preliminary Hydrogeologic Study Phase II (Environmental Science & Engineering, Inc. – March 1985)

In 1984, Environmental Science & Engineering, Inc. (ESE) installed 12 monitoring wells (*MW-6B*, MW-11C, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18A, MW-18B, MW-19, and MW-20) that were sampled for the USEPA list of Priority Pollutants. Monitoring wells *MW-6B*, MW-12, and MW-16 have since been removed. Slug tests were conducted on four of these twelve monitoring wells to determine the hydraulic conductivity of the soil formation surrounding the screened section of the well.

APPENDIX B — Previous Site Investigations

Investigation of Perchloroethylene Contamination in Soil and Groundwater near Building FF (Environmental Science & Engineering, Inc. – March 1985)

ESE conducted an investigation of a leaking UST containing PCE located immediately west of the FF Building. During this study, soil samples were collected from eight soil borings to determine the impact to the unsaturated zone. One soil sample from each boring was submitted for laboratory analysis. Four monitoring wells (MW-A through MW-D) were installed and sampled for VOCs (wells have since been removed).

Recovery Well Installation – January 1987

In January of 1987 Monsanto hired Brotcke Engineering Company, Inc. to install four recovery wells (REC-1 through -4) in the FF Building Area. The recovery wells were used to recover free phase PCE associated with the leaking UST. PCE was recovered during the early stages of the effort; however recovery efforts were discontinued after a few months when no additional PCE was recovered.

Evaluation of Groundwater Conditions in the Vicinity of the Lasso Production Area (Geraghty & Miller, Inc. - 1986)

During this investigation, the depth and the areal extent of the free phase alachlor detected in well MW-14 was determined, along with groundwater flow direction in the vicinity of the area. Soil data were collected from 10 soil borings (B-1 through B-5 and GM-1 through GM-5). Groundwater data were collected from five new monitoring wells (GM-1 through GM-5) and existing Monitoring Well MW-14. Monitoring wells GM-4 and GM-5 have since been removed.

Review of Hydrogeologic Investigations at the John F. Queeny Plant (Geraghty & Miller, Inc. - June 1988)

Geraghty & Miller prepared this report to summarize the work completed to date at the plant and to present the information in a single comprehensive document.

Assessment of Hydrogeologic Conditions at the Coal Storage Yard and Victor Street Terminal (Geraghty & Miller, Inc. - November 1988)

Geraghty & Miller conducted an environmental assessment of the former Coal Storage Yard and the Victor Street terminal (former Bulk Chemical Storage Area) to assess groundwater quality and the hydrogeologic conditions at these two sites. During this study, twelve soil borings were drilled and sampled in the former Coal Storage Yard and Victor Street terminal (HB-1 through

HB-3, VB-1 through VB-9, respectively). In addition to the soil borings, three wells (HW-1, HW-2, and HW-3) were installed in the former Coal Storage Yard and two wells (VW-1 and VW-2) were installed at the Victor Street terminal.

Soil samples were screened in the field for VOCs with a photoionization detector (PID). Nine soil borings at the Victor Street terminal were drilled in the upper soils around the former storage tanks to assess if leaks or spills had occurred in the past. Several composite soil samples were collected from inside the diked area and analyzed in Monsanto's in-house laboratory. Three soil borings were completed at the former Coal Storage Yard to aid in the extent assessment.

The three wells in the former Coal Storage Yard were located in the northern, central, and southern portion of the site. Prior to installing the wells, the borings were drilled to bedrock to determine the bedrock depth. The two wells installed at the Victor Street terminal were installed on the eastern or down-gradient side of the facility. Both wells were screened within the perched groundwater table. Prior to the installation of monitoring well VW-1, the boring was drilled to bedrock to determine the bedrock depth. The monitoring wells were sampled for USEPA priority pollutant compounds that included VOCs, acid extractable organics, base/neutral organics, pesticides, PCBs, phenols, total cyanides, and metals. Water levels were also measured to calculate the direction and horizontal gradient of groundwater flow.

Final RCRA Facility Assessment Report for Monsanto-Queeny Plant (Jacobs Engineering Group Inc. - January 1989)

This report by Jacobs Engineering Group documented the Preliminary Assessment (PA) portion of the RFA for the John F. Queeny Plant. The report summarizes the Preliminary Review (PR) phase and the Visual Site Inspection (VSI) phase of the RFA. This report primarily addressed conditions at the site as they existed at the time and did not consider historical conditions. The report gathered and discussed information on releases at RCRA regulated facilities, and evaluated releases of hazardous waste or hazardous waste constituents to soil and groundwater from SWMUs. The report used this information to address the need for further action and interim measures at the facility.

RCRA Facility Investigation (Geraghty & Miller, Inc. - March 1992)

Geraghty & Miller conducted the RFI in accordance with the RCRA facility permit. The purpose of conducting the RFI was to characterize the nature, extent, and rate of migration of

possible releases of chemicals to both soil and groundwater. The field investigation was conducted to supplement the existing data. Investigation activities included soil and groundwater sampling, bedrock coring, aquifer testing, risk assessment, and groundwater modeling.

The four SWMUs evaluated during this investigation were the former Acetanilides Production Area, the former Quarry Area, the former Bulk Chemical Storage Area, and the former Boiler Slag Accumulation Area. The collected soil samples were analyzed for the Title 40 Code of Federal Regulations (CFR) Part 264 Appendix IX constituents, with the exception of the former Acetanilides Production Area where only VOCs were analyzed.

The following activities were completed as part of the RFI:

Soil

- Fourteen soil borings were drilled and samples were collected to characterize the nature and extent of constituents in the unsaturated zone of the former Acetanilides Production and railroad unloading area.
- Four borings were drilled and samples were collected to determine the thickness of the fill material overlying the bedrock in the former Quarry Area.
- Four borings were drilled and sampled to gather soil quality data to characterize the former Bulk Chemical Storage Area.
- A shallow surface sample was collected at the former Boiler Slag Accumulation Area.
- Five borings were advanced into bedrock to examine the lithology of the bedrock and then converted into bedrock monitoring wells (MW-2R, MW-8R, MW-9R MW-13R, and MW-21R) to characterize the quality of the groundwater in the bedrock. Monitoring well MW-9R has since been removed.

Groundwater

Groundwater quality was examined on a site-wide basis.

- One monitoring well (QS-1) was installed in the former Quarry Area to the top of bedrock. This well was used to collect data about the groundwater directly above the bedrock.

- One monitoring well was installed in both the former Coal Storage Yard (HW-1B) and the former Bulk Chemical Storage Area (VW-2B). The function of these wells was to monitor the deep portion of the unconsolidated aquifer.
- Two rounds of water level measurements were conducted to determine groundwater flow direction.
- Two rounds of groundwater sampling were conducted from the 28 monitoring wells to characterize the site-wide groundwater quality.
- Test well TW-1 (8 in. diameter) and observation well OBS-1 (4 in. diameter) were installed in the unconsolidated material in the northern portion of the site to conduct an aquifer test. The aquifer test was a constant rate test to further define the aquifer coefficients (transmissivity, hydraulic conductivity, and storativity) of the unconsolidated aquifer. The aquifer coefficients were used for the development of a two-dimensional, steady state, ground-water flow model. The model was used to characterize the fate and transport of constituents in the groundwater, and to predict the concentrations of constituents that may enter the Mississippi River.
- Slug tests were performed at 10 of the monitoring wells distributed across the site to determine the hydraulic conductivity of the unconsolidated deposits. These data were used to supplement past aquifer testing and the current constant-rate aquifer test.
- A human health and environmental assessment was performed to identify and evaluate the potential risk to future exposures to onsite soil during potential excavation projects and to groundwater discharging to the Mississippi River.

Building FF Phase I Investigation (O'Brien & Gere Engineers, Inc. - July 1993)

In May 1993 an investigation was conducted to investigate the soil and groundwater in the vicinity of the former FF Building, which was dismantled in 1992.

During May and June of 1993 O'Brien and Gere collected a total of 22 groundwater samples. The groundwater samples were collected from 17 direct push borings advanced during the investigation, monitoring well MW-3, and recovery wells (REC-1 through -4). GeoTrace, Inc. using headspace analysis and gas chromatography (GC), analyzed the groundwater samples onsite. No dense non-aqueous phase liquid (DNAPL) was detected in any of the wells during the

investigation. In addition, 10 soil samples were collected from soil borings SB-1 through SB-5 and analyzed for PCE and trichloroethene (TCE) by method SW-8240.

A series of cone penetrometer tests (CPTs) were also conducted during this investigation to assess the depth to bedrock in the area of the former FF Building. Piezometers were then installed based on the information gathered from the CPT study. Upon the completion of the piezometer installation, a groundwater survey and sampling event were conducted.

Building FF Phase II Investigation (O'Brien & Gere Engineers, Inc. - November 1993)

O'Brien & Gere Engineers completed a Phase II investigation to further delineate the impacted soil and groundwater. During the investigation groundwater samples were collected from GP-22 through GP-30 and analyzed for both TCE and PCE. Twelve soil samples (SB-7 through SB-12) were also collected and analyzed for TCE and PCE. Groundwater levels were measured from the four existing wells to determine groundwater flow.

LNAPL Subsurface Investigation (O'Brien & Gere Engineers, Inc. - June 1994)

O'Brien & Gere Engineers completed this investigation to assess the limits of the free phase LNAPL that was observed in a piezometer located north of the former FF Building Area during the FF Building Phase I Investigation conducted in July of 1993. O'Brien and Gere collected and analyzed eight groundwater samples from Geoprobe borings (GPT-1 through GPT-8) for total VOC analysis via onsite analysis. The investigation was used to present the lateral extent of the free phase.

Phase II RCRA Facility Investigation (Geraghty & Miller, Inc. - June 1994)

At the request of the Monsanto Company, and in response to USEPA letters dated September 17, 1992 and June 2, 1993, Geraghty & Miller, Inc. completed Phase II of the RFI at the Queeny Plant. Phase II was conducted in accordance with the RCRA facility permit. The purpose of conducting the Phase II was to supplement the Phase I investigation and to further characterize the nature, extent, and rate of migration of possible releases of chemicals to both soil and groundwater. The field investigation was conducted during the fall of 1993 and the spring of 1994. Investigation activities included soil and groundwater sampling, a monitoring well

abandonment, and an inventory of the site monitoring wells. Phase II activities are summarized below.

Soil

- Fifteen soil samples were collected in the former Acetanilides Production Area/railcar unloading area to delineate the areal extent of alachlor in the soil.
- Soil samples were collected from eight borings in the former Bulk Chemical Storage Area to determine any residual impact from the former storage tanks.
- Soil samples were collected around the former Boiler Slag Accumulation Area pad to delineate the horizontal and vertical extent of soils potentially impacted with PCBs and metals.
- Soil samples were collected from four borings located west of the KK Building Area to determine the possible impact to the soil from the former aboveground storage tanks.
- Soil samples were collected from three specified locations and depths in the former Coal Storage Yard to verify historic PID measurements above background in the vadose zone.
- Soil samples were collected at 33 locations in the V V Building Area to delineate the horizontal and vertical extent of PCB impacted soil.
- Four soil borings were drilled and sampled to determine the northern extent of the former Quarry Area.
- Background samples for metals were collected from three locations in the northwest parking lot.

Groundwater

- Groundwater samples were collected from Monitoring Well MW-13 and at six geoprobe locations surrounding the well to identify the source of a historical detection of p-chloraniline in well MW-13. Soil samples were also collected to determine the source of p-chloraniline around MW-13.
- Groundwater samples were collected from monitoring well MW-20 and at two geoprobe locations surrounding the well to identify the source of a historical detection of cyanide in

MW-20. Soil samples were also collected to determine the source of cyanide around MW-20.

- Groundwater samples were collected from 11 monitoring wells (GM-1, GM-3, GM-5, MW-3, MW-4, MW-5, MW-11B, MW-13, MW-14, MW-15, AND QS-1) and three geoprobes (GM-1A, GM-1B, and GM-1C) locations. These samples served to delineate the extent of the alachlor at the former Acetanilides Production Area/railcar unloading area.
- Groundwater sampling was conducted at six wells (VW-2, MW-3, MW-8A, MW-13, MW-14, and OBS-1) for analysis of VOCs to resolve sample analysis dilution problems previously encountered.
- Groundwater samples were collected from three monitoring wells (MW-13, MW-15, and MW-20) to determine the mobile fraction of metals in groundwater.
- Seven wells (GM-1 through GM-5, MW-14, and VW-2) were gauged for the presence of non-aqueous phase liquids (NAPLs).
- Monitoring Well MW-9R, screened in the bedrock, was abandoned.

Buildings AAA and BM Investigation (Monsanto Company-April 1995)

The University of Missouri conducted an environmental assessment of Buildings AAA and BM prior to a proposed donation of these properties to the university. Five soil samples were collected and analyzed for dioxins. Groundwater samples were also collected from eight monitoring wells (MW-1 through MW-8) and analyzed for VOCs, SVOCs, total petroleum hydrocarbon (TPH), and metals.

RCRA Facility Investigation Data Gap Investigation Report (URS Corporation, - July 2002)

At the request of the Solutia, and in response to USEPA Notice of Defiency (NOD) dated July 17, 1997, URS Corporation completed the Data Gap investigation at the Queeny Plant. The Data Gap investigation was conducted in accordance with the Data Gap Work Plan (September 24, 1999), and approved amendments. The purpose of conducting Data Gap investigation was to address the NOD, specifically to collect more data to adequately characterize the nature and extent of on-site and off-site soil and groundwater impact at or from the facility; or provide

adequete information to support further corrective action decisions at the facility. The field investigation was conducted during the summer of 2000. The site investigation activities were designed to verify the existing soil data for the various SWMUs and to provide additional soil and groundwater data to better assess the nature and extent of impact. Investigation activities included a focused soil sampling program, monitoring well installation, groundwater gauging and sampling, LNAPL and DNAPL investigation, and a monitoring well integrity assessment and upgrade. Data Gap activities are summarized below.

Soil

A focused soil sampling program was conducted to meet the project objectives as outlined in the Data Gap Work Plan. A total of 18 soil borings were advanced. The project objectives include the following.

- Obtain additional surface soil samples to confirm the results of prior sampling for risk assessment purposes.

- Two soil borings (SB-A and SB-B) were drilled and samples were collected in the former Acetanilides Production Area. Boring SB-B was drilled near existing location AC-3 and boring SB-A was drilled near existing location AC-4 as called for in the work plan.

- Three soil borings (SB-C1, SB-C2, and SB-C3) were drilled and samples were collected in the former Quarry Area. The borings were near existing locations GP-1 and QS-3.

- Two soil borings (SB-D and SB-E) were drilled and samples were collected in the former Bulk Chemical Storage Area. Boring SB-D was drilled during the well installation on the northeast side of the area. Boring SB-E was drilled near existing locations VS-5 and VS-6.

- Two soil borings (SB-F and SB-G) were drilled and samples were collected in the KK Building Area. Boring SB-F was drilled west of existing location KP-3 and near the fence line. Boring SB-G was drilled near existing monitoring wells MW-7A and MW-7B.

- Four soil borings (SB-H, SB-I, SB-J, and SB-K) were drilled and surface soil samples were collected in the former Coal Storage Yard. The work plan specified that two samples with the highest PID measurements be submitted for analysis. Samples from borings SB-H and SB-I were collected between existing locations HB-3GP and HB-2GP, these historically had

the highest VOC results. Boring SB-J was drilled between existing locations HW-2GP and HB-1. The sample from boring SB-K was not submitted for analysis due to low PID measurements.

- Assess the nature and extent of PCBs in subsurface soils at the WW Building Area.

- Four soil borings were advanced at the WW Building Area to assess the potential presence and extent of PCBs in soils. Fourteen soil samples were collected and field-tested by immunoassay analysis for PCBs using Strategic Diagnostics Inc. Ensys™ PCB Soil Test Kit, EPA Method 4020. The kits are designed to produce a positive, colorimetric result at a detection limit of 2 milligrams per kilogram (mg/kg). The results for nine of the samples were clearly below the detection limit (non detect). The other five of the fourteen samples that were field-tested were submitted to Severn Trent Laboratories (STL) for confirmatory analysis. Of these five, only one sample produced a clear, positive colorimetric result. The other four samples did not produce a definitive result but were submitted for analysis to be conservative; the additional four samples were chosen based on the color gradations closest to a positive result produced by the field test. Upon receipt of preliminary laboratory results, a step-out boring was drilled to the south and samples were collected at two predetermined depths.

- Assess the nature and extent of potential VOCs at the former Lab Waste Filtration Unit.

- One soil boring (SB-M) was completed in the former Lab Waste Filtration Unit. One soil sample was collected from the bottom depth of the former unit (6 ft). No VOCs were noted from this boring based on field PID measurements. As such, a temporary piezometer was not installed, per the work plan.

Groundwater

Monitoring Well Installation, Development, Sampling, and Groundwater Level Measurements

A total of 13 monitoring wells (MW-22, -23, -24A, -24B, -25A, -25B, -26, -27, -28A, -28B, -29, -30A, and –30B) were installed during this investigation to provide additional groundwater data for determining the nature and extent of groundwater impact. There are currently a total of 65 monitoring wells and piezometers at the site.

The locations of the new monitoring wells were based on the laboratory analytical results for groundwater samples collected during previous investigations and are positioned to fill data gaps.

Groundwater monitoring wells were installed in the areas identified below; and the data from these wells were specifically used for the following purposes, as outlined in the Data Gap Work Plan.

- One well (MW-22) was installed near the former Acetanilides Production Area southeast of Monitoring Well MW-4, and screened in the silty clay. This well was intended to provide downgradient data from the former Acetanilides Production Area and assess the potential for off-site migration.

- One well (MW-23) was installed along the east perimeter of the site between Monitoring Well MW-10 and MW-13, and screened in the fill. This well was intended to provide downgradient data from the former Acetanilides Production Area and assess the potential for off-site migration.

- Two sets of wells were installed in the former Bulk Chemical Storage Area to provide downgradient data and to assess the potential for off-site migration. Wells MW-24A and MW-24B were installed along the south end of the former Bulk Chemical Storage Area. Well MW-24A was screened in the fill and well MW-24B was screened in the sand. Wells MW-25A and MW-25B were installed along the east side of the former Bulk Chemical Storage Area, and located north of well VW-2. Well MW-25A was screened in the fill and well MW-25B was screened in the sand.

- One well (MW-26) was installed along the east perimeter of the site to the south of MW-13R, and east of the former Quarry Area. MW-26 was screened in the fill. This well was intended to provide downgradient data from the former Quarry Area and assess the potential for off-site migration.

- One well (MW-27) was located along the east perimeter of the site between Monitoring Well MW-9 and MW-10, and screened in the fill. This well was intended to assess the potential for off-site migration.

- Two wells (MW-28A and MW-28B) were installed along the south side of the KK Building Area, and south of well MW-8B. Well MW-28A was screened in the fill and MW-28B was screened in the sand. These wells were intended to provide downgradient data from the KK Building Area and assess the potential for off-site migration.

- One well (MW-29) was located along the east perimeter of the site and on the east side of the KK Building near well MW-8B. The well was screened in the sand just above the bedrock. This well was intended to provide downgradient data from the KK Building area and to assess the potential for off-site migration.

- Two wells (MW-30A and MW-30B) were installed at the northeast corner of the site and located north of the KK Building Area. Well MW-30A was screened in the fill or silty clay and well MW-30B was screened in the sand. These wells were intended to provide data downgradient from then KK Building Area and assess the potential for off-site migration.

During the borings for the monitoring wells, two soil samples were generally collected from each well location and analyzed for TOC. One sample was collected from the saturated zone and one from the unsaturated zone.

Existing monitoring wells were developed using air-assisted purging equipment mounted on a trailer to remove fines from the well screen and filter pack.

LNAPL *and DNAPL* Investigation

A subsurface investigation was conducted by geoprobing for soil characterization and groundwater collection via temporary piezometers in the former FF Building Area. The primary objective of this work was to further characterize the extent of previously identified LNAPL. In addition to the geoprobing, piezometer LPZ-4 was bailed to assess the rate of LNAPL recovery. Also, Recovery Wells REC-1 through REC-4 were gauged to assess the presence of DNAPL.

Monitoring Well Integrity Assessment and Upgrades

Personnel from the MDNR were onsite on June 14-15 to conduct a RCRA Observation and Maintenance Audit and on June 29 to split groundwater samples. On July 7, 2000, Solutia received a letter (via fax) from USEPA transmitting MDNR's concerns with the potential integrity of 23 of the existing monitoring wells as documented during the field audit. In response to the letter, on July 10-11 URS Corp (URS) conducted a field evaluation of the conditions of the

23 monitoring wells to better understand the conditions and to help address the issues. On July 13, Solutia sent a response letter to the USEPA and MDNR with the findings of URS's evaluation. As indicated in the letter, Solutia directed URS to install a new pad at well HW-1, and to replace almost all of the well slip caps[1] with tightening J-plugs.

During the redevelopment of well REC-1, it was discovered that the top of the well casing appeared to have a slight breech where water was seeping in. As an apparent result, the well contained approximately 17 ft. of sediment. Based on a phone conversation between Kurt Hollman (MDNR) and Bob Billman (URS) on July 6, 2000, it was decided that REC-1 could be sampled if the sediment was removed and the well screen determined to be intact.

URS believes that the integrity of those wells had not been compromised. The wells were sampled according to the criteria outlined in the work plan and as amended via correspondence between Solutia and the USEPA. The well development/purging and sampling procedures were sufficient to indicate the wells were functioning properly. As such, the wells were judged to be capable of providing representative groundwater samples. This was agreed to by USEPA and MDNR via verbal communication (reference Quarterly Report Nos. 41 and 42). Furthermore, the data validation process deemed the associated analytical data to be useable.

During the Data Gap field effort, the risers of wells REC-1 through REC-4 were extended to bring them closer to ground surface. These wells are located inside manholes and, as originally configured, were considered a confined space for entry purposes. This modification was discussed with the USEPA oversight representative and approved through MDNR.

[1] The configuration of some of the risers prevented the installation of J plugs.

APPENDIX C

APPENDIX C
INFORMATION REGARDING TABLE C-1

Table C-1

This table depicts groundwater data for constituents that exceeded federal maximum contaminant levels (MCLs) (obtained via Internet March 2001) or, where MCLs did not exist, USEPA Region 3 Risk Based Concentrations (RBCs) for tap water (October 2000). These analytes represent Constituents of Potential Concern (COPCs) for the human health risk assessment. This table was modified from Table 4-4 of the Data Gap Investigation Report (July 2002).

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Fill and Silt Clay Wells										
GM-1	06/20/00	8260	Chlorobenzene	180000	ug/l	D		100	UG/L	Fed MCL
GM-1	06/20/00	8141	Alachlor	130000	ug/l			2	UG/L	Fed MCL
GM-2	06/30/00	8260	Chlorobenzene	70000	ug/l			100	UG/L	Fed MCL
GM-2	06/30/00	8260	Ethyl methacrylate	1400	ug/l	J		550	UG/L	RBC
GM-3	07/06/00	8260	Chlorobenzene	5900	ug/l			100	UG/L	Fed MCL
GM-3	07/06/00	8141	Alachlor	9.9	ug/l	P	J	2	UG/L	Fed MCL
HW-2	07/26/00	8260	Benzene	6.8	ug/l		J	5	UG/L	Fed MCL
HW-2	07/26/00	8260	Chloroform	2.2	ug/l	J		0.15	UG/L	RBC
HW-2	07/26/00	8260	Chloromethane	3.6	ug/l	J		2.1	UG/L	RBC
HW-2	07/26/00	8260	cis/trans-1,2-Dichloroethene	1100	ug/l	D		55	UG/L	RBC
HW-2	07/26/00	8260	Tetrachloroethene	9.6	ug/l			5	UG/L	Fed MCL
HW-2	07/26/00	8260	Trichloroethene	16000	ug/l	D		5	UG/L	Fed MCL
LPZ-1	07/14/00	8260	Benzene	68	ug/l	J		5	UG/L	Fed MCL
LPZ-1	07/14/00	8260	Chlorobenzene	660	ug/l			100	UG/L	Fed MCL
LPZ-1	07/14/00	8260	cis/trans-1,2-Dichloroethene	19000	ug/l			55	UG/L	RBC
LPZ-1	07/14/00	8260	Tetrachloroethene	170	ug/l	J		5	UG/L	Fed MCL
LPZ-1	07/14/00	8260	Toluene	310000	ug/l	D		1000	UG/L	Fed MCL
LPZ-1	07/14/00	8260	Trichloroethene	3200	ug/l			5	UG/L	Fed MCL
LPZ-1	07/14/00	8260	Vinyl chloride	2500	ug/l			2	UG/L	Fed MCL
LPZ-2	06/27/00	8260	cis/trans-1,2-Dichloroethene	820	ug/l			55	UG/L	RBC
LPZ-2	06/27/00	8260	Methylene chloride	1500	ug/l	JB	J	4.1	UG/L	RBC
LPZ-2	06/27/00	8260	Toluene	70000	ug/l			1000	UG/L	Fed MCL
LPZ-2	06/27/00	8260	Vinyl chloride	460	ug/l			2	UG/L	Fed MCL
LPZ-3	07/27/00	8260	Benzene	66	ug/l	J		5	UG/L	Fed MCL
LPZ-3	07/27/00	8260	Chlorobenzene	130	ug/l	J		100	UG/L	Fed MCL
LPZ-3	07/27/00	8260	Methylene chloride	18	ug/l	JB	J	4.1	UG/L	RBC
LPZ-3	07/27/00	8260	Toluene	4200	ug/l			1000	UG/L	Fed MCL
LPZ-4	08/01/00	8260	Benzene	770	ug/l	J	J	5	UG/L	Fed MCL
LPZ-4	08/01/00	8260	Chlorobenzene	2300	ug/l	J		100	UG/L	Fed MCL
LPZ-4	08/01/00	8260	cis/trans-1,2-Dichloroethene	4100	ug/l			55	UG/L	RBC
LPZ-4	08/01/00	8260	Tetrachloroethene	3800	ug/l			5	UG/L	Fed MCL
LPZ-4	08/01/00	8260	Toluene	660000	ug/l	D		1000	UG/L	Fed MCL
LPZ-4	08/01/00	8260	Trichloroethene	3100	ug/l			5	UG/L	Fed MCL
LPZ-4	08/01/00	8260	Vinyl chloride	2400	ug/l			2	UG/L	Fed MCL
LPZ-5	07/14/00	8260	Benzene	300	ug/l	J		5	UG/L	Fed MCL

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Fill and Silt Clay Wells										
LPZ-5	07/14/00	8260	Chlorobenzene	15000	ug/l			100	UG/L	Fed MCL
LPZ-5	07/14/00	8260	cis/trans-1,2-Dichloroethene	750	ug/l	J		55	UG/L	RBC
LPZ-5	07/14/00	8260	Toluene	170000	ug/l			1000	UG/L	Fed MCL
LPZ-5	07/14/00	8260	Vinyl chloride	840	ug/l			2	UG/L	Fed MCL
MW-2B	07/25/00	8260	cis/trans-1,2-Dichloroethene	220	ug/l			55	UG/L	RBC
MW-2B	07/25/00	8260	Vinyl chloride	18	ug/l			2	UG/L	Fed MCL
MW-3	06/20/00	8260	cis/trans-1,2-Dichloroethene	400	ug/l			55	UG/L	RBC
MW-3	06/20/00	8260	Tetrachloroethene	310	ug/l			5	UG/L	Fed MCL
MW-3	06/20/00	8260	Trichloroethene	160	ug/l			5	UG/L	Fed MCL
MW-3	06/20/00	8260	Vinyl chloride	14	ug/l			2	UG/L	Fed MCL
MW-3	06/20/00	8270	Benzo(a)pyrene	0.48	ug/l	J		0.2	UG/L	Fed MCL
MW-4	07/13/00	8260	Chlorobenzene	240	ug/l	D		100	UG/L	Fed MCL
MW-4	07/13/00	8270	Benzo(a)anthracene	0.39	ug/l	J		0.092	UG/L	RBC
MW-4	07/13/00	8141	Alachlor	13	ug/l			2	UG/L	Fed MCL
MW-4 DUP	07/13/00	8260	Chlorobenzene	300	ug/l	D		100	UG/L	Fed MCL
MW-4 DUP	07/13/00	8141	Alachlor	12	ug/l			2	UG/L	Fed MCL
MW-5	06/21/00	8141	Alachlor	6	ug/l			2	UG/L	Fed MCL
MW-9F	06/23/00	6010	Thallium	0.005	mg/l	B		0.002	MG/L	Fed MCL
MW-10	06/22/00	6010	Arsenic	0.066	mg/l			0.05	MG/L	Fed MCL
MW-11A	07/24/00	8270	Benzo(a)anthracene	1	ug/l	J		0.092	UG/L	RBC
MW-11A	07/24/00	8270	Benzo(a)pyrene	1	ug/l	J		0.2	UG/L	Fed MCL
MW-11A	07/24/00	8270	Benzo(b)fluoranthene	0.86	ug/l	J		0.092	UG/L	RBC
MW-11A	07/24/00	8270	Benzo(k)fluoranthene	0.95	ug/l	J		0.92	UG/L	RBC
MW-11A	07/24/00	8270	Indeno-(1,2,3-cd)pyrene	0.61	ug/l	J		0.092	UG/L	RBC
MW-11A	07/24/00	6010	Arsenic	0.056	mg/l			0.05	MG/L	Fed MCL
MW-11A	07/24/00	6010	Lead	0.22	mg/l			0.015	MG/L	Fed MCL
MW-11B	06/20/00	6010	Lead	0.087	mg/l			0.015	MG/L	Fed MCL
MW-11C	07/24/00	8260	Chloromethane	2.6	ug/l	J		2.1	UG/L	RBC
MW-11C	07/24/00	8270	Benzo(a)anthracene	0.6	ug/l	J		0.092	UG/L	RBC
MW-11C	07/24/00	8270	Benzo(a)pyrene	0.55	ug/l	J		0.2	UG/L	Fed MCL
MW-11C	07/24/00	8270	Benzo(b)fluoranthene	0.43	ug/l	J		0.092	UG/L	RBC
MW-13	06/19/00	8260	Benzene	720	ug/l			5	UG/L	Fed MCL
MW-13	06/19/00	8260	Chlorobenzene	1400	ug/l	D	J	100	UG/L	Fed MCL
MW-13	06/19/00	8270	Benzo(a)anthracene	0.88	ug/l	J		0.092	UG/L	RBC
MW-13	06/19/00	8270	Benzo(a)pyrene	0.97	ug/l	J		0.2	UG/L	Fed MCL

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Fill and Silt Clay Wells										
MW-13	06/19/00	8270	Bis(2-ethylhexyl)phthalate	7.5	ug/l	J		6	UG/L	Fed MCL
MW-13	06/19/00	8270	Indeno-(1,2,3-cd)pyrene	0.83	ug/l	J		0.092	UG/L	RBC
MW-13	06/19/00	8270	p-chloroaniline	660	ug/l	D		150	UG/L	RBC
MW-13	06/19/00	8141	Alachlor	3.3	ug/l	N	J	2	UG/L	Fed MCL
MW-13	06/19/00	6010	Lead	0.11	mg/l			0.015	MG/L	Fed MCL
MW-13 Dup	06/19/00	8260	Benzene	780	ug/l			5	UG/L	Fed MCL
MW-13 Dup	06/19/00	8260	Chlorobenzene	1400	ug/l	D	J	100	UG/L	Fed MCL
MW-13 Dup	06/19/00	8270	Benzo(a)anthracene	0.66	ug/l	J		0.092	UG/L	RBC
MW-13 Dup	06/19/00	8270	Benzo(a)pyrene	0.87	ug/l	J		0.2	UG/L	Fed MCL
MW-13 Dup	06/19/00	8270	Indeno-(1,2,3-cd)pyrene	0.71	ug/l	J		0.092	UG/L	RBC
MW-13 Dup	06/19/00	8270	p-chloroaniline	560	ug/l	D		150	UG/L	RBC
MW-13 Dup	06/19/00	8141	Alachlor	2.4	ug/l		NJ	2	UG/L	Fed MCL
MW-13 Dup	06/19/00	6010	Lead	0.099	mg/l			0.015	MG/L	Fed MCL
MW-14	07/06/00	8260	Chlorobenzene	91000	ug/l	D		100	UG/L	Fed MCL
MW-14	07/06/00	8141	Alachlor	220000	ug/l			2	UG/L	Fed MCL
MW-14	07/06/00	6010	Lead	0.029	mg/l			0.015	MG/L	Fed MCL
MW-15	07/18/00	8270	Benzo(a)anthracene	0.89	ug/l	J		0.092	UG/L	RBC
MW-15	07/18/00	8270	Benzo(a)pyrene	1.3	ug/l	J		0.2	UG/L	Fed MCL
MW-15	07/18/00	8270	Benzo(b)fluoranthene	1.4	ug/l	J		0.092	UG/L	RBC
MW-15	07/18/00	8270	Benzo(k)fluoranthene	1.5	ug/l	J		0.92	UG/L	RBC
MW-15	07/18/00	8270	Dibenzo(a,h)anthracene	1.4	ug/l	J		0.0092	UG/L	RBC
MW-15	07/18/00	8270	Indeno-(1,2,3-cd)pyrene	1.3	ug/l	J		0.092	UG/L	RBC
MW-15	07/18/00	8141	Alachlor	8.1	ug/l	P		2	UG/L	Fed MCL
MW-15	07/18/00	6010	Arsenic	0.16	mg/l			0.05	MG/L	Fed MCL
MW-15F	07/18/00	6010	Arsenic	0.072	mg/l			0.05	MG/L	Fed MCL
MW-17	07/21/00	8260	cis/trans-1,2-Dichloroethene	200	ug/l			55	UG/L	RBC
MW-17	07/21/00	8260	Trichloroethene	13	ug/l			5	UG/L	Fed MCL
MW-17	07/21/00	8260	Vinyl chloride	38	ug/l			2	UG/L	Fed MCL
MW-18B	07/20/00	8260	Chloromethane	3.4	ug/l	J		2.1	UG/L	RBC
MW-18B	07/20/00	8270	Benzo(a)pyrene	0.47	ug/l	J		0.2	UG/L	Fed MCL
MW-19	06/30/00	8260	Chlorobenzene	20000	ug/l			100	UG/L	Fed MCL
MW-20	07/21/00	SW9012	Cyanide, Total	1.4	mg/l			0.2	MG/L	Fed MCL
MW-20	07/21/00	6010	Lead	0.033	mg/l			0.015	MG/L	Fed MCL
MW-22	07/17/00	8260	1,2-Dichloroethane	17	ug/l	J		5	UG/L	Fed MCL
MW-22	07/17/00	8260	cis/trans-1,2-Dichloroethene	82	ug/l			55	UG/L	RBC

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Fill and Silt Clay Wells										
MW-22	07/17/00	8260	Tetrachloroethene	380	ug/l		J	5	UG/L	Fed MCL
MW-22	07/17/00	8260	Trichloroethene	100	ug/l			5	UG/L	Fed MCL
MW-22	07/17/00	8260	Vinyl chloride	3.3	ug/l			2	UG/L	Fed MCL
MW-22	07/17/00	8270	Benzo(a)anthracene	2.3	ug/l	J		0.092	UG/L	RBC
MW-22	07/17/00	8270	Benzo(a)pyrene	1.2	ug/l	J		0.2	UG/L	Fed MCL
MW-22	07/17/00	8270	Benzo(b)fluoranthene	1.5	ug/l	J		0.092	UG/L	RBC
MW-22	07/17/00	8270	Benzo(k)fluoranthene	1.3	ug/l	J		0.92	UG/L	RBC
MW-22	07/17/00	8270	Dibenzo(a,h)anthracene	0.88	ug/l	J		0.0092	UG/L	RBC
MW-22	07/17/00	8270	Indeno-(1,2,3-cd)pyrene	0.92	ug/l	J		0.092	UG/L	RBC
MW-22	07/17/00	8141	Alachlor	7	ug/l			2	UG/L	Fed MCL
MW-23	07/21/00	6010	Lead	0.11	mg/l			0.015	MG/L	Fed MCL
MW-24A	07/24/00	8260	Benzene	83	ug/l			5	UG/L	Fed MCL
MW-24A	07/24/00	8270	Naphthalene	12	ug/l			6.5	UG/L	RBC
MW-24A	07/24/00	8270	2-Chlorophenol	36	ug/l			30	UG/L	RBC
MW-24A	07/24/00	6010	Arsenic	0.35	mg/l			0.05	MG/L	Fed MCL
MW-24AF	07/24/00	6010	Lead	0.017	mg/l			0.015	MG/L	Fed MCL
MW-25A	07/11/00	8260	Benzene	160	ug/l			5	UG/L	Fed MCL
MW-25A	07/11/00	8260	Chlorobenzene	950	ug/l			100	UG/L	Fed MCL
MW-25A	07/11/00	8270	Benzo(a)anthracene	0.82	ug/l	J		0.092	UG/L	RBC
MW-25A	07/11/00	8270	Benzo(a)pyrene	0.71	ug/l	J		0.2	UG/L	Fed MCL
MW-25A	07/11/00	8270	Benzo(b)fluoranthene	0.61	ug/l	J		0.092	UG/L	RBC
MW-25A	07/11/00	8270	Bis(2-ethylhexyl)phthalate	8.7	ug/l	J		6	UG/L	Fed MCL
MW-25A	07/11/00	8270	Indeno-(1,2,3-cd)pyrene	0.61	ug/l	J		0.092	UG/L	RBC
MW-25A	07/11/00	8270	Naphthalene	35	ug/l			6.5	UG/L	RBC
MW-25A	07/11/00	6010	Arsenic	0.31	mg/l			0.05	MG/L	Fed MCL
MW-25A	07/11/00	6010	Barium	5.3	mg/l			2	MG/L	Fed MCL
MW-25A	07/11/00	6010	Beryllium	0.017	mg/l			0.004	MG/L	Fed MCL
MW-25A	07/11/00	6010	Cadmium	0.008	mg/l			0.005	MG/L	Fed MCL
MW-25A	07/11/00	6010	Chromium	0.46	mg/l			0.1	MG/L	Fed MCL
MW-25A	07/11/00	6010	Lead	0.6	mg/l			0.015	MG/L	Fed MCL
MW-25A	07/11/00	6010	Thallium	0.0099	mg/l	B		0.002	MG/L	Fed MCL
MW-25A	07/11/00	6010	Vanadium	0.83	mg/l			0.26	MG/L	RBC
MW-25AF	07/11/00	6010	Arsenic	0.14	mg/l			0.05	MG/L	Fed MCL
MW-26	07/18/00	8270	Benzo(a)anthracene	1.1	ug/l	J		0.092	UG/L	RBC
MW-26	07/18/00	8270	Benzo(a)pyrene	1.4	ug/l	J		0.2	UG/L	Fed MCL

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Fill and Silt Clay Wells										
MW-26	07/18/00	8270	Benzo(b)fluoranthene	1.6	ug/l	J		0.092	UG/L	RBC
MW-26	07/18/00	8270	Benzo(k)fluoranthene	1.6	ug/l	J		0.92	UG/L	RBC
MW-26	07/18/00	8270	Dibenzo(a,h)anthracene	2.3	ug/l	J		0.0092	UG/L	RBC
MW-26	07/18/00	8270	Indeno-(1,2,3-cd)pyrene	2.1	ug/l	J		0.092	UG/L	RBC
MW-26	07/18/00	6010	Lead	0.04	mg/l			0.015	MG/L	Fed MCL
MW-30A	07/12/00	8270	Benzo(a)anthracene	0.49	ug/l	J		0.092	UG/L	RBC
MW-30A	07/12/00	8270	Benzo(a)pyrene	0.48	ug/l	J		0.2	UG/L	Fed MCL
MW-30A	07/12/00	8270	Benzo(b)fluoranthene	0.31	ug/l	J		0.092	UG/L	RBC
MW-30A	07/12/00	6010	Lead	0.36	mg/l			0.015	MG/L	Fed MCL
Piezometer-1	06/27/00	8260	Chlorobenzene	180	ug/l			100	UG/L	Fed MCL
PZ-FF2	06/20/00	8260	Benzene	140	ug/l	J		5	UG/L	Fed MCL
PZ-FF2	06/20/00	8260	cis/trans-1,2-Dichloroethene	810	ug/l	J		55	UG/L	RBC
PZ-FF2	06/20/00	8260	Toluene	200000	ug/l	D	J	1000	UG/L	Fed MCL
PZ-FF2	06/20/00	8260	Vinyl chloride	740	ug/l			2	UG/L	Fed MCL
PZ-FF3	06/22/00	8260	Benzene	350	ug/l	J		5	UG/L	Fed MCL
PZ-FF3	06/22/00	8260	Chlorobenzene	960	ug/l	J		100	UG/L	Fed MCL
PZ-FF3	06/22/00	8260	cis/trans-1,2-Dichloroethene	1500	ug/l	J		55	UG/L	RBC
PZ-FF3	06/22/00	8260	Toluene	5700000	ug/l	D		1000	UG/L	Fed MCL
PZ-FF3	06/22/00	8260	Trichloroethene	1500	ug/l	J		5	UG/L	Fed MCL
PZ-FF3	06/22/00	8260	Vinyl chloride	1100	ug/l			2	UG/L	Fed MCL
QS-1	07/13/00	8270	Benzo(a)anthracene	0.51	ug/l	J		0.092	UG/L	RBC
QS-1	07/13/00	8270	Bis(2-ethylhexyl)phthalate	8.9	ug/l	J		6	UG/L	Fed MCL
QS-1	07/13/00	6010	Barium	2.6	mg/l			2	MG/L	Fed MCL
QS-1F	07/13/00	6010	Barium	2.4	mg/l			2	MG/L	Fed MCL
REC-1	07/11/00	8260	Chlorobenzene	16000	ug/l			100	UG/L	Fed MCL
REC-1	07/11/00	8260	cis/trans-1,2-Dichloroethene	1300	ug/l			55	UG/L	RBC
REC-1	07/11/00	8260	Methylene chloride	980	ug/l	JB	J	4.1	UG/L	RBC
REC-1	07/11/00	8260	Tetrachloroethene	57000	ug/l			5	UG/L	Fed MCL
REC-1	07/11/00	8260	Trichloroethene	1000	ug/l	J		5	UG/L	Fed MCL
REC-1	07/11/00	8270	Benzo(a)anthracene	1	ug/l	J		0.092	UG/L	RBC
REC-1	07/11/00	8270	Benzo(a)pyrene	0.83	ug/l	J		0.2	UG/L	Fed MCL
REC-1	07/11/00	8270	Benzo(b)fluoranthene	0.76	ug/l	J		0.092	UG/L	RBC
REC-1	07/11/00	8270	Bis(2-ethylhexyl)phthalate	16	ug/l			6	UG/L	Fed MCL
REC-1	07/11/00	8270	Indeno-(1,2,3-cd)pyrene	0.85	ug/l	J		0.092	UG/L	RBC
REC-2	06/28/00	8260	Chlorobenzene	1200	ug/l	J		100	UG/L	Fed MCL

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Fill and Silt Clay Wells										
REC-2	06/28/00	8260	cis/trans-1,2-Dichloroethene	1500	ug/l			55	UG/L	RBC
REC-2	06/28/00	8260	Methylene chloride	640	ug/l	JB	J	4.1	UG/L	RBC
REC-2	06/28/00	8260	Tetrachloroethene	59000	ug/l			5	UG/L	Fed MCL
REC-2	06/28/00	8260	Trichloroethene	1400	ug/l	J		5	UG/L	Fed MCL
REC-2	06/28/00	8270	Bis(2-ethylhexyl)phthalate	37	ug/l	B	J	6	UG/L	Fed MCL
REC-3	06/28/00	8260	Chlorobenzene	1100	ug/l			100	UG/L	Fed MCL
REC-3	06/28/00	8260	cis/trans-1,2-Dichloroethene	3400	ug/l			55	UG/L	RBC
REC-3	06/28/00	8260	Methylene chloride	230	ug/l	JB	J	4.1	UG/L	RBC
REC-3	06/28/00	8260	Tetrachloroethene	28000	ug/l			5	UG/L	Fed MCL
REC-3	06/28/00	8260	Trichloroethene	3400	ug/l			5	UG/L	Fed MCL
REC-3	06/28/00	8260	Vinyl chloride	130	ug/l			2	UG/L	Fed MCL
REC-3	06/28/00	8270	Bis(2-ethylhexyl)phthalate	90	ug/l	B	J	6	UG/L	Fed MCL
REC-4	06/28/00	8260	Chlorobenzene	200	ug/l	J		100	UG/L	Fed MCL
REC-4	06/28/00	8260	cis/trans-1,2-Dichloroethene	260	ug/l			55	UG/L	RBC
REC-4	06/28/00	8260	Tetrachloroethene	9400	ug/l			5	UG/L	Fed MCL
REC-4	06/28/00	8260	Trichloroethene	1100	ug/l			5	UG/L	Fed MCL
REC-4	06/28/00	8260	Vinyl chloride	26	ug/l			2	UG/L	Fed MCL
REC-4	06/28/00	8270	Bis(2-ethylhexyl)phthalate	13	ug/l	B	J	6	UG/L	Fed MCL
VW-1	07/26/00	8260	Benzene	15000	ug/l	D		5	UG/L	Fed MCL
VW-1	07/26/00	8260	Chlorobenzene	4800	ug/l	D		100	UG/L	Fed MCL
VW-1	07/26/00	8260	Chloromethane	6.8	ug/l	J		2.1	UG/L	RBC
VW-1	07/26/00	8270	Benzo(a)anthracene	1.8	ug/l	J		0.092	UG/L	RBC
VW-1	07/26/00	8270	Benzo(a)pyrene	1.2	ug/l	J		0.2	UG/L	Fed MCL
VW-1	07/26/00	8270	Benzo(b)fluoranthene	1.5	ug/l	J		0.092	UG/L	RBC
VW-1	07/26/00	8270	Benzo(k)fluoranthene	1.8	ug/l	J		0.92	UG/L	RBC
VW-1	07/26/00	8270	Indeno-(1,2,3-cd)pyrene	0.83	ug/l	J		0.092	UG/L	RBC
VW-1	07/26/00	8270	Naphthalene	53	ug/l			6.5	UG/L	RBC
VW-1	07/26/00	6010	Lead	0.37	mg/l		J	0.015	MG/L	Fed MCL
VW-1 Dup	07/26/00	8260	Benzene	15000	ug/l	D		5	UG/L	Fed MCL
VW-1 Dup	07/26/00	8260	Chlorobenzene	4500	ug/l	D		100	UG/L	Fed MCL
VW-1 Dup	07/26/00	8260	Chloromethane	5.5	ug/l	J		2.1	UG/L	RBC
VW-1 Dup	07/26/00	8270	Benzo(a)anthracene	1.4	ug/l	J		0.092	UG/L	RBC
VW-1 Dup	07/26/00	8270	Benzo(a)pyrene	1.1	ug/l	J		0.2	UG/L	Fed MCL
VW-1 Dup	07/26/00	8270	Benzo(b)fluoranthene	0.98	ug/l	J		0.092	UG/L	RBC
VW-1 Dup	07/26/00	8270	Benzo(k)fluoranthene	1.4	ug/l	J		0.92	UG/L	RBC

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Fill and Silt Clay Wells										
VW-1 Dup	07/26/00	8270	Indeno-(1,2,3-cd)pyrene	0.64	ug/l	J		0.092	UG/L	RBC
VW-1 Dup	07/26/00	8270	Naphthalene	47	ug/l			6.5	UG/L	RBC
VW-1 Dup	07/26/00	6010	Lead	0.066	mg/l		J	0.015	MG/L	Fed MCL
VW-2	08/01/00	8260	Benzene	35	ug/l		J	5	UG/L	Fed MCL
VW-2	08/01/00	8260	Chlorobenzene	970	ug/l	D		100	UG/L	Fed MCL
VW-2	08/01/00	8270	Benzo(a)anthracene	2.8	ug/l	J		0.092	UG/L	RBC
VW-2	08/01/00	8270	Benzo(a)pyrene	2.7	ug/l	J		0.2	UG/L	Fed MCL
VW-2	08/01/00	8270	Benzo(b)fluoranthene	2.6	ug/l	J		0.092	UG/L	RBC
VW-2	08/01/00	8270	Benzo(k)fluoranthene	3.2	ug/l	J		0.92	UG/L	RBC
VW-2	08/01/00	8270	Bis(2-ethylhexyl)phthalate	14	ug/l			6	UG/L	Fed MCL
VW-2	08/01/00	8270	Dibenzo(a,h)anthracene	0.97	ug/l	J		0.0092	UG/L	RBC
VW-2	08/01/00	8270	Indeno-(1,2,3-cd)pyrene	2.1	ug/l	J		0.092	UG/L	RBC
VW-2	08/01/00	6010	Antimony	0.057	mg/l			0.006	MG/L	Fed MCL
Sand Wells										
VW-2	08/01/00	6010	Barium	2.7	mg/l			2	MG/L	Fed MCL
VW-2	08/01/00	6010	Lead	0.78	mg/l			0.015	MG/L	Fed MCL
VW-2F	08/01/00	6010	Lead	0.094	mg/l			0.015	MG/L	Fed MCL
HW-1	07/24/00	8260	cis/trans-1,2-Dichloroethene	1700	ug/l	D		55	UG/L	RBC
HW-1	07/24/00	8260	Trichloroethene	74	ug/l			5	UG/L	Fed MCL
HW-1	07/24/00	8260	Vinyl chloride	3.8	ug/l			2	UG/L	Fed MCL
HW-1 Dup	07/24/00	8260	cis/trans-1,2-Dichloroethene	1000	ug/l	D		55	UG/L	RBC
HW-1 Dup	07/24/00	8260	Trichloroethene	44	ug/l			5	UG/L	Fed MCL
HW-1 Dup	07/24/00	8260	Vinyl chloride	2.2	ug/l			2	UG/L	Fed MCL
HW-1B	06/29/00	8260	cis/trans-1,2-Dichloroethene	880	ug/l			55	UG/L	RBC
HW-1B	06/29/00	8260	Tetrachloroethene	38	ug/l			5	UG/L	Fed MCL
HW-1B	06/29/00	8260	Trichloroethene	590	ug/l			5	UG/L	Fed MCL
MW-7A	07/21/00	8260	Benzene	48	ug/l	J		5	UG/L	Fed MCL
MW-7A	07/21/00	8260	Chlorobenzene	3100	ug/l			100	UG/L	Fed MCL
MW-7A	07/21/00	8260	Vinyl chloride	220	ug/l			2	UG/L	Fed MCL
MW-7A	07/21/00	8270	Bis(2-ethylhexyl)phthalate	81	ug/l	B	J	6	UG/L	Fed MCL
MW-7A	07/21/00	8270	Naphthalene	24	ug/l			6.5	UG/L	RBC
MW-7B	07/20/00	8260	Chloromethane	2.6	ug/l	J		2.1	UG/L	RBC
MW-7B	07/20/00	8270	1,4-Dichlorobenzene	270	ug/l			75	UG/L	Fed MCL
MW-7B	07/20/00	8270	Benzo(a)anthracene	0.79	ug/l	J		0.092	UG/L	RBC
MW-7B	07/20/00	8270	Benzo(a)pyrene	0.76	ug/l	J		0.2	UG/L	Fed MCL

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Sand Wells										
MW-7B	07/20/00	8270	Benzo(b)fluoranthene	0.85	ug/l	J		0.092	UG/L	RBC
MW-7B	07/20/00	8270	Benzo(k)fluoranthene	1	ug/l	J		0.92	UG/L	RBC
MW-7B	07/20/00	8270	Bis(2-ethylhexyl)phthalate	13	ug/l	B	J	6	UG/L	Fed MCL
MW-7B	07/20/00	8270	Naphthalene	340	ug/l	D		6.5	UG/L	RBC
MW-7B	07/20/00	8270	p-chloroaniline	650	ug/l	D		150	UG/L	RBC
MW-8A	06/29/00	8260	Benzene	16	ug/l	J		5	UG/L	Fed MCL
MW-8A	06/29/00	8260	Chlorobenzene	3400	ug/l			100	UG/L	Fed MCL
MW-8A	06/29/00	8260	Methylene chloride	58	ug/l	JB	J	4.1	UG/L	RBC
MW-8A	06/29/00	8260	Tetrachloroethene	61	ug/l	J		5	UG/L	Fed MCL
MW-8A	06/29/00	8270	Bis(2-ethylhexyl)phthalate	28	ug/l	B	J	6	UG/L	Fed MCL
MW-8A	06/29/00	8270	Naphthalene	26	ug/l			6.5	UG/L	RBC
MW-8ADUP	06/29/00	8260	Benzene	16	ug/l	J		5	UG/L	Fed MCL
MW-8ADUP	06/29/00	8260	Chlorobenzene	3400	ug/l			100	UG/L	Fed MCL
MW-8ADUP	06/29/00	8260	Tetrachloroethene	72	ug/l	J		5	UG/L	Fed MCL
MW-8ADUP	06/29/00	8270	Bis(2-ethylhexyl)phthalate	22	ug/l	B	J	6	UG/L	Fed MCL
MW-8ADUP	06/29/00	8270	Naphthalene	29	ug/l			6.5	UG/L	RBC
MW-8ADUP	06/29/00	8270	2-Chlorophenol	33	ug/l			30	UG/L	RBC
MW-8ADUP	06/29/00	6010	Thallium	0.0051	mg/l	B		0.002	MG/L	Fed MCL
MW-18A	07/19/00	8260	Benzene	130	ug/l			5	UG/L	Fed MCL
MW-18A	07/19/00	8260	Chlorobenzene	2700	ug/l	B	J	100	UG/L	Fed MCL
MW-18A	07/19/00	8270	Benzo(a)pyrene	0.91	ug/l	J		0.2	UG/L	Fed MCL
MW-18A	07/19/00	8270	Benzo(b)fluoranthene	0.92	ug/l	J		0.092	UG/L	RBC
MW-18A	07/19/00	8270	Benzo(k)fluoranthene	1.1	ug/l	J		0.92	UG/L	RBC
MW-18A	07/19/00	8270	Bis(2-ethylhexyl)phthalate	17	ug/l	B	J	6	UG/L	Fed MCL
MW-18A	07/19/00	8270	Dibenzo(a,h)anthracene	1.8	ug/l	J		0.0092	UG/L	RBC
MW-18A	07/19/00	8270	Indeno-(1,2,3-cd)pyrene	0.61	ug/l	J		0.092	UG/L	RBC
MW-18A	07/19/00	8270	Naphthalene	100	ug/l			6.5	UG/L	RBC
MW-18A	07/19/00	8270	p-chloroaniline	2000	ug/l	D		150	UG/L	RBC
MW-24B	07/11/00	8260	Benzene	6200	ug/l			5	UG/L	Fed MCL
MW-24B	07/11/00	8260	Chlorobenzene	15000	ug/l			100	UG/L	Fed MCL
MW-24B	07/11/00	8260	Methylene chloride	180	ug/l	JB	J	4.1	UG/L	RBC
MW-24B	07/11/00	8270	Benzo(a)anthracene	0.65	ug/l	J		0.092	UG/L	RBC
MW-24B	07/11/00	8270	Benzo(a)pyrene	0.92	ug/l	J		0.2	UG/L	Fed MCL
MW-24B	07/11/00	8270	Benzo(b)fluoranthene	0.71	ug/l	J		0.092	UG/L	RBC
MW-24B	07/11/00	8270	Bis(2-ethylhexyl)phthalate	7.9	ug/l	J		6	UG/L	Fed MCL

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Sand Wells										
MW-24B	07/11/00	8270	Dibenzo(a,h)anthracene	1.1	ug/l	J		0.0092	UG/L	RBC
MW-24B	07/11/00	8270	Indeno-(1,2,3-cd)pyrene	1.3	ug/l	J		0.092	UG/L	RBC
MW-24B	07/11/00	8270	Naphthalene	64	ug/l			6.5	UG/L	RBC
MW-24B	07/11/00	6010	Lead	0.027	mg/l			0.015	MG/L	Fed MCL
MW-25B	07/10/00	8260	Chloroform	2.8	ug/l	J		0.15	UG/L	RBC
MW-25B	07/10/00	8260	Vinyl chloride	14	ug/l			2	UG/L	Fed MCL
MW-25B	07/10/00	6010	Lead	0.027	mg/l			0.015	MG/L	Fed MCL
MW-28B	07/20/00	8260	Chlorobenzene	120	ug/l			100	UG/L	Fed MCL
MW-28B	07/20/00	8260	Chloromethane	2.8	ug/l	J		2.1	UG/L	RBC
MW-28B	07/20/00	8270	Benzo(a)anthracene	1.3	ug/l	J		0.092	UG/L	RBC
MW-28B	07/20/00	8270	Benzo(a)pyrene	1.1	ug/l	J		0.2	UG/L	Fed MCL
MW-28B	07/20/00	8270	Benzo(b)fluoranthene	1	ug/l	J		0.092	UG/L	RBC
MW-28B	07/20/00	8270	Benzo(k)fluoranthene	1.3	ug/l	J		0.92	UG/L	RBC
MW-28B	07/20/00	8270	Indeno-(1,2,3-cd)pyrene	0.8	ug/l	J		0.092	UG/L	RBC
MW-28B	07/20/00	8270	Naphthalene	8.4	ug/l	J		6.5	UG/L	RBC
MW-28B	07/20/00	6010	Arsenic	0.11	mg/l			0.05	MG/L	Fed MCL
MW-28B	07/20/00	6010	Barium	2.2	mg/l			2	MG/L	Fed MCL
MW-28B	07/20/00	6010	Beryllium	0.006	mg/l			0.004	MG/L	Fed MCL
MW-28B	07/20/00	6010	Cadmium	0.01	mg/l			0.005	MG/L	Fed MCL
MW-28B	07/20/00	6010	Chromium	0.57	mg/l			0.1	MG/L	Fed MCL
MW-28B	07/20/00	6010	Lead	0.91	mg/l			0.015	MG/L	Fed MCL
MW-28B	07/20/00	SW7470	Mercury	0.0029	mg/l	SN		0.002	MG/L	Fed MCL
MW-28B	07/20/00	6010	Vanadium	0.3	mg/l			0.26	MG/L	RBC
MW-29	07/12/00	8260	Bromodichloromethane	1.9	ug/l	J		0.17	UG/L	RBC
MW-29	07/12/00	8260	Chlorobenzene	140	ug/l			100	UG/L	Fed MCL
MW-29	07/12/00	8260	Chloroform	6.8	ug/l			0.15	UG/L	RBC
MW-29	07/12/00	8260	Vinyl chloride	6.8	ug/l			2	UG/L	Fed MCL
MW-29	07/12/00	8270	Benzo(a)anthracene	0.38	ug/l	J		0.092	UG/L	RBC
MW-29	07/12/00	8270	Bis(2-ethylhexyl)phthalate	13	ug/l			6	UG/L	Fed MCL
MW-29 DUP	07/12/00	8260	Bromodichloromethane	1.9	ug/l	J		0.17	UG/L	RBC
MW-29 DUP	07/12/00	8260	Chlorobenzene	160	ug/l			100	UG/L	Fed MCL
MW-29 DUP	07/12/00	8260	Chloroform	6.9	ug/l			0.15	UG/L	RBC
MW-29 DUP	07/12/00	8260	Vinyl chloride	7.3	ug/l			2	UG/L	Fed MCL
MW-29 DUP	07/12/00	8270	Benzo(a)anthracene	0.43	ug/l	J		0.092	UG/L	RBC
MW-29 DUP	07/12/00	8270	Benzo(b)fluoranthene	0.33	ug/l	J		0.092	UG/L	RBC

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Sand Wells										
MW-29 DUP	07/12/00	8270	Bis(2-ethylhexyl)phthalate	15	ug/l			6	UG/L	Fed MCL
MW-30B	07/12/00	8260	Benzene	7	ug/l			5	UG/L	Fed MCL
MW-30B	07/12/00	8260	Chlorobenzene	210	ug/l			100	UG/L	Fed MCL
MW-30B	07/12/00	8260	Vinyl chloride	36	ug/l			2	UG/L	Fed MCL
MW-30B	07/12/00	8270	Benzo(a)anthracene	1.1	ug/l	J		0.092	UG/L	RBC
MW-30B	07/12/00	8270	Benzo(a)pyrene	0.83	ug/l	J		0.2	UG/L	Fed MCL
MW-30B	07/12/00	8270	Benzo(b)fluoranthene	0.61	ug/l	J		0.092	UG/L	RBC
MW-30B	07/12/00	8270	Indeno-(1,2,3-cd)pyrene	0.62	ug/l	J		0.092	UG/L	RBC
MW-30B	07/12/00	6010	Arsenic	0.099	mg/l			0.05	MG/L	Fed MCL
MW-30B	07/12/00	6010	Barium	3.1	mg/l			2	MG/L	Fed MCL
MW-30B	07/12/00	6010	Beryllium	0.0087	mg/l			0.004	MG/L	Fed MCL
MW-30B	07/12/00	6010	Cadmium	0.012	mg/l			0.005	MG/L	Fed MCL
MW-30B	07/12/00	6010	Chromium	0.27	mg/l			0.1	MG/L	Fed MCL
MW-30B	07/12/00	6010	Lead	0.67	mg/l			0.015	MG/L	Fed MCL
MW-30B	07/12/00	SW7470	Mercury	0.0076	mg/l			0.002	MG/L	Fed MCL
MW-30B	07/12/00	6010	Vanadium	0.46	mg/l			0.26	MG/L	RBC
OBS-1	07/20/00	8260	Chlorobenzene	500	ug/l	D		100	UG/L	Fed MCL
OBS-1	07/20/00	8260	Tetrachloroethene	5.2	ug/l		J	5	UG/L	Fed MCL
OBS-1	07/20/00	8270	Bis(2-ethylhexyl)phthalate	11	ug/l	B	J	6	UG/L	Fed MCL
OBS-1 DUP	07/20/00	8260	Chlorobenzene	1000	ug/l	D		100	UG/L	Fed MCL
TW-1	07/19/00	8260	Chlorobenzene	130	ug/l	B	J	100	UG/L	Fed MCL
TW-1	07/18/00	8270	Benzo(a)anthracene	0.58	ug/l	J		0.092	UG/L	RBC
TW-1	07/18/00	8270	Benzo(a)pyrene	1.2	ug/l	J		0.2	UG/L	Fed MCL
TW-1	07/18/00	8270	Benzo(b)fluoranthene	0.77	ug/l	J		0.092	UG/L	RBC
TW-1	07/18/00	8270	Benzo(k)fluoranthene	0.94	ug/l	J		0.92	UG/L	RBC
TW-1	07/18/00	8270	Dibenzo(a,h)anthracene	2.1	ug/l	J		0.0092	UG/L	RBC
TW-1	07/18/00	8270	Indeno-(1,2,3-cd)pyrene	1.8	ug/l	J		0.092	UG/L	RBC
VW-2B	07/25/00	8260	cis/trans-1,2-Dichloroethene	230	ug/l			55	UG/L	RBC
VW-2B	07/25/00	8260	Vinyl chloride	21	ug/l			2	UG/L	Fed MCL
VW-2B	07/25/00	8270	Bis(2-ethylhexyl)phthalate	26	ug/l	B	J	6	UG/L	Fed MCL
VW-2B	07/25/00	8270	Dibenzo(a,h)anthracene	2.4	ug/l	J		0.0092	UG/L	RBC
Bedrock Wells										
MW-8R	07/27/00	8270	Bis(2-ethylhexyl)phthalate	26	ug/l			6	UG/L	Fed MCL
MW-13R	07/07/00	8260	Tetrachloroethene	12	ug/l			5	UG/L	Fed MCL
MW-13R	07/07/00	8270	Bis(2-ethylhexyl)phthalate	55	ug/l	B	J	6	UG/L	Fed MCL

TABLE C-1
SUMMARY OF GROUNDWATER SCREENING RESULTS

Sample ID	Sample Date	Method	Analyte	Result	Units	Lab Q	URS Q	Screening Criteria	Screening Unit	Basis
Bedrock Wells										
MW-13R	07/07/00	8141	Alachlor	2.7	ug/l		J	2	UG/L	Fed MCL
MW-21R	07/11/00	8260	Chlorobenzene	140	ug/l			100	UG/L	Fed MCL
MW-21R	07/11/00	8260	Tetrachloroethene	5.2	ug/l			5	UG/L	Fed MCL
OBW-1	06/07/00	8260	Chlorobenzene	4400	ug/l			100	UG/L	Fed MCL
OBW-1	06/07/00	8260	cis/trans-1,2-Dichloroethene	2500	ug/l			55	UG/L	RBC
OBW-1	06/07/00	8260	Tetrachloroethene	92000	ug/l	D		5	UG/L	Fed MCL
OBW-1	06/07/00	8260	Trichloroethene	1500	ug/l			5	UG/L	Fed MCL
OBW-1	06/07/00	8260	Vinyl chloride	140	ug/l			2	UG/L	Fed MCL
OBW-1	06/07/00	8270	Bis(2-ethylhexyl)phthalate	61	ug/l	B	J	6	UG/L	Fed MCL
OBW-1	06/07/00	8270	Nitrobenzene	2100	ug/l	D		3.5	UG/L	RBC
OBW-1	06/07/00	8270	p-chloroaniline	320	ug/l			150	UG/L	RBC
OBW-2	07/07/00	8260	Benzene	67	ug/l			5	UG/L	Fed MCL
OBW-2	07/07/00	8260	Chlorobenzene	15000	ug/l	D		100	UG/L	Fed MCL
OBW-2	07/07/00	8260	cis/trans-1,2-Dichloroethene	3700	ug/l			55	UG/L	RBC
OBW-2	07/07/00	8260	Tetrachloroethene	120000	ug/l	D		5	UG/L	Fed MCL
OBW-2	07/07/00	8260	Toluene	1400	ug/l			1000	UG/L	Fed MCL
OBW-2	07/07/00	8260	Trichloroethene	4100	ug/l	D	J	5	UG/L	Fed MCL
OBW-2	07/07/00	8260	Vinyl chloride	45	ug/l			2	UG/L	Fed MCL
OBW-2	07/07/00	8270	Bis(2-ethylhexyl)phthalate	31	ug/l	B	J	6	UG/L	Fed MCL
OBW-2	07/07/00	8270	p-chloroaniline	300	ug/l			150	UG/L	RBC
OBW-3	07/06/00	8260	Benzene	67	ug/l			5	UG/L	Fed MCL
OBW-3	07/06/00	8260	Chlorobenzene	2900	ug/l	D	J	100	UG/L	Fed MCL
OBW-3	07/06/00	8260	Trichloroethene	39	ug/l			5	UG/L	Fed MCL

Notes:

Modified from Table 4-4 from the RCRA Facility Investigation Data Gap Investigation Report (URS, July 2002)

Fed MCLs = Federal Maximum Contaminant Levels (accessed from the internet March 2001)

RBC = USEPA Region 3 Risk Based Concentrations (RBCs) for Tap Water (October 2000)

An "F" in the Sample ID (e.g., MW-20F) indicates a filtered sample.

Q = qualifier

ug/l = micrograms per liter

mg/l = milligrams per liter

TABLE C-1

SUMMARY OF GROUNDWATER SCREENING RESULTS

URS QUALIFIERS	
QUALIFIER	**DEFINITIONS[1]**
J	The associated value is an estimated quantity
N	Presumptive evidence of presence. Analyte may or may not be present.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
LABORATORY QUALIFIERS	
QUALIFIER	**INORGANIC QUALIFIER DEFINITIONS**
B	This flag indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).
N	This flag indicates that spiked sample recovery is not within control limits.
S	This flag indicates that the reported value was determined by the Method of Standard Additions (MSA).
QUALIFIER	**ORGANIC QUALIFIER DEFINITIONS**
B	This flag is used when the analyte if found in the associated method blank as well as in the sample.
D	If a sample or extract is reanalyzed at a higher dilution factor, the DL suffix is appended to the sample number of the Form I for the more diluted sample, and all reported concentrations on that Form I are flagged with the D flag.
J	This flag indicates an estimated value. This flag is used (1) when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the results is less than the CRQL but greater than zero, and (3) when the retention time data indicate the presence of a compound that meets the pesticide/Aroclor identification criteria, and the result is less than the CRQL but greater than zero.
N	This flag indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search.
P	This flag is used for pesticide/Aroclor target analyte when there is greater than 35% difference for detected concentrations between the two GC columns.

[1] USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994.